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ABSTRACT

What teachers do in the classroom affects pupil learning. To shape patterns of interactions proactively, teachers must get useful feedback they can understand. Seeing objective data may encourage teachers to think more seriously about the ways their classroom behavior influences students and about how students' behavior reciprocally influences teacher behavior. Several studies suggest that there is a specific order of stages a teacher must pass through before reaching the mastery stage of development. A study conducted at Bowling Green State University (Ohio) attempted to determine the developmental stage of 107 student teachers (53 assigned to a control group and 54 to an experimental group). All students completed a pretest to determine their developmental stage before starting a 10-week student teaching experience. Supervisors for the experimental group were trained in the use of a new observation instrument and observed and coded their students during the fourth week of student teaching. During the fifth week, those students attended a seminar where they transferred the information from the observation form to a computer, and learned to use the Classroom Awareness Supervisory System to analyze classroom activity. Both the experimental and control groups completed a posttest and questionnaire the final week of student teaching. Analysis of responses covered the following areas of awareness: self, content, pupils, and environment. No significant mean differences were found in the areas of self, content, or pupil awareness, but a significant change occurred in the control group in the area of environment awareness. No student teachers were found to be in the early stage of self-awareness (survival), which may be due to the 300 field and clinical hours required prior to student teaching. Questionnaire responses indicated that the student teachers enjoyed using the computer program and found it useful for analyzing their classroom behavior. (EDS)

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Enhancing Teacher Classroom Awareness Through a Computerized Supervisory Feedback System

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The modern era of research on teacher behaviors and teacher effects began in 1957 with the work of such investigators as Flanders, Medley, and Mitzel. The number of recent studies since these early investigations has been minimal and not always consistent (Rosenshine, 1976). There appears to be even fewer recent studies investigating the behaviors and attitudes of pre-service teachers, a topic extensively covered in the 1970s (Koehler, 1985).

The importance and usefulness of classroom observation systems is based on the assumption that what teachers do in the classroom affects pupil learning. In order to measure those behaviors it is necessary to observe and record the teacher in action--to observe what is actually taking place in instructional context.

Good and Brophy (1984) found that the average classroom is a busy place. Jackson (1968) estimated that elementary teachers engage in more than one thousand interactions with students each day. Teaching involves such a rapidly paced sequence of action and reaction that a teacher is hard pressed simply to keep up, let alone monitor his/her behavior at the same time. A good teacher becomes so absorbed in the act of teaching that it is difficult to get a total perspective on what happens in the classroom. However, in order to improve, a teacher must learn to monitor his/her behavior or at least to get feedback if he/she is to shape the pattern of interactions proactively.

Teacher awareness is the key to achievement of this type of proactive teaching. Typically in the past, teachers did not get much useful feedback even from their principals or supervisor. As a result, unproductive habits and teaching patterns often persisted indefinitely simply because the teacher was unaware of them (Brophy & Good, 1974). Improvements in supervision are evident today and provide teachers with evaluation systems and feedback that they can understand (Educational Leadership, 1987).

Flanders (1970) was one of the first researchers to develop a systematic way of observing teacher behavior and classroom verbal interaction. He suggests that an observation instrument can be used for self-study; for showing a teacher how to start to analyze his/her own behavior. His interaction analysis technique can be used to answer three deceptively simple questions: What kind of interaction is taking place? Can some change be planned and then realized? Is this change an improvement?

This kind of analysis can be used by experienced teachers who wish to improve their classroom instruction and particularly by college students seeking to become teachers. However, teachers are not trained to see and respond to what actually is happening in the classroom. Teacher training programs seldom equip prospective teachers with specific teaching techniques or skills for analyzing classroom behavior. They are often given global advice which is not linked to specific behaviors (Good & Brophy, 1974).

It has been shown by McNeil (1971), among others, that teachers are most likely to change their classroom behavior when they are provided with information that specifically shows a discrepancy between what they want to do and what they are doing. Supervisors and principals do not always provide this information to teachers. Tuckman and Oliver (1971) found that teacher behavior was not substantially changed by feedback from their supervisors. The key to helping teachers change their behavior seems to lie in helping them see their own behavior. This can best be accomplished by the use of systematic observation instruments.

Observation, as a technique to study teaching behaviors has been a part of educational research for several decades. Evertson and Green (1986) describe four overlapping phases:

1. Exploratory phase (1939-1963), research on whether student-teacher interactions and other related classroom behaviors could be reliably and validly identified.

2. Development phase (1958-1973), period of time dealing with instrument development and descriptive, experimental, and training studies.

3. Teacher effects phase (1973-present), period during which research was concerned with teacher behaviors that related to student outcome. (This is often referred to as the process-product approach.)

4. Expansion phase (parallels phase 3), period of expansion and theoretical and methodological advances.

Alternative approaches using observational techniques were later developed to study teaching. One example is interaction analysis developed by Flanders. Developed as a research tool, Flanders later found that it could be adopted as a procedure for providing teachers information about their overt behavior in the classroom. When this information is fed back to teachers they suddenly have the unique opportunity to compare their actions with their intentions. Flanders assumed that any reduction in the discrepancy between what a teacher intends to do and what he/she does is likely to result in the improvement of instruction (Flanders, 1965).

A researcher or observer's goal is to freeze everyday activities or experimental activities so they can be examined systematically. In order to do this the researcher must select a tool to obtain a representation of reality. "The crucial point is to select a tool that fits the phenomenon under study and the level of context that is appropriate (Evertson & Green, 1986). A researcher must either select or adapt an existing instrument or construct a new one that is appropriate to the question asked. It must be remembered, however, that any tool used or any approach to observation of an event provides only one view or representation of the phenomena under study.

Most researchers feel that if observational data are collected in appropriate ways, that information can have positive effects on classroom behavior. However, school districts do not often use observation systems to gather

information or help teachers. If schools are to ever realize the potential of observational research, they will have to invest reasonable amounts of time and energy in understanding and developing techniques for observational procedures. Recent research has demonstrated that teachers can be trained to improve their instructional efforts and successful use of classroom observation is one way to help improve their skills. Seeing objective data may encourage teachers to think more seriously about the ways their classroom behavior influence their students and about how students reciprocally influence teacher behavior (Good, 1980).

Several educators have studied the developmental stages of teachers and pre-service teachers. Frances Fuller (1969) suggests that there is a specific order of stages which teachers must pass through before reaching the highest stage which she terms "impact of teaching." Lilian Katz (1972) named four stages of development: 1) survival, 2) consolidation, 3) renewal, and 4) maturity. Heidi Watts (1982) borrowed theory from psychology to determine three distinct stages: 1) survival, 2) middle, and 3) mastery. Easterly, Williston, and Allan (1982) expanded Watts' stages into: 1) exploration, 2) trial, 3) survival, 4) middle, and 5) mastery.

This study attempted to first determine the stage of development for Bowling Green student teachers and then tested an instrument designed to enhance their awareness of classroom activity. Fuller (1969) posed the question of whether teacher concerns were manipulable. She felt that any procedures which helped to resolve early concerns of teachers (stages) would open the way for movement to a later more mature concern or stage such as the impact of their teaching on their pupils. JoAnne Martin (1977) found that student teachers tended to focus on themselves when first beginning their experience. She used split-screen video feedback to help them direct their attention away from self characteristics and toward their pupils.

Few educators would deny the importance of making available to teachers as well as student teachers, conceptual tools that enable them to analyze the teaching process. An observation system provides a mirror for the teacher to receive feedback about his/her own teaching behavior. This feedback provides the opportunity to change unwanted behavior based on the data collected. Even more important, many of these systems have been constructed along a theoretical dimension which includes behaviors presumed to be helpful in promoting pupil growth but which are not necessarily found in American classrooms today.

> When a teacher uses one of these systems he gets feedback about the behaviors which he is not using, as well as those which he is. This supplies the chance to learn new behaviors and thus expand the teacher behavior repertoire in ways not ordinarily available to teachers (Bellack, 1968, pp. 19-20).

A pilot study was conducted at Bowling Green State University spring semester 1986, and from the results instruments were changed or improved. A quasi-experimental design was used for the major study conducted fall semester 1986.

One hundred seven student teachers participated in the study with 53 assigned to the control group and 54 to the experimental group. All students completed a pretest developed by the researcher and used to determine the developmental stage of the student teachers.

Supervisors for the experimental group were trained in the use of a new observation instrument and observed and coded their students during the fourth week of student teaching. During the fifth week, those students attended a seminar where they transferred the information from the observation form to a computer, and learned to use the Classroom Awareness Supervisory System (CASS) to analyze classroom activity. Students also completed a computer-assisted worksheet.

All student teachers completed a posttest the tenth (final) week of their experience. Students in the experimental group also completed a short questionnaire regarding the computer program.

A one-way analysis of variance for repeated measures was used to analyze the data. Four hypotheses were tested, each dealing with one area of awareness: self, content, pupil, and environment. No significant mean differences were found in the areas of self, content, or pupil, but there was a significant change (.05) from pre to posttest for the control group in the area of environment awareness. Other data suggested that elementary student teachers were focusing more on their pupils than the secondary student teachers who were more aware of content. Also suggested was that female student teachers were focusing more on their pupils than any other area of awareness.

Of particular interest was the evidence that Bowling Green student teachers were not in the early stage of self awareness (survival) as suggested by previous studies of developmental theories. BGSU student teachers, as measured by the Classroom Activity Awareness Scale (CAAS), were clearly in the final developmental stages or more aware of content and pupils (see graph 1). This refutes the theories discussed previously of Watts, Katz, and Fuller and helps confirm research by Reeves and Kazelskis (1985) which indicates that student teachers are not necessarily in stage one at the beginning of their culminating experience in college. Apparently the student teachers at BGSU have passed through the early stages of development, perhaps due to the 300 required field and clinical hours prior to student teaching.

Results from the questionnaire indicated that the student teachers enjoyed using the computer program and found it useful to them in analyzing their classroom behavior. This and other feedback seem to indicate that the Classroom Awareness Supervisory System has potential as a supervisory tool for both preservice and experienced teachers. Future plans for testing include using county supervisors and beginning teachers.

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